LOUISIANA Conservationist

LOUISIANA WILD LIFE AND FISHERIES COMMISSION

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Conservation Pledge

I give my pledge as an American to save and faithfully to defend from waste the natural resources of my country—its soil and minerals, its forests, waters and wildlife

Published Bi-Monthly in the interest of conservation of Louisiana's natual resources by the Wild Life and Fisheries Commission, Peabody Hall, Capitol Station, Baton Rouge, Louisiana 70804.

This angler is admiring his freshly-caught speckled trout. One of the most prolific fish in coastal waters, speckled trout are undoubtedly the most sought-after salt water fish along the northern Gulf of Mexico. From the initial spring runs to the usual fall runs when speckled trout seem to be of larger size, they are eagerly sought by coastal fishermen. Getting in on one of those big runs is something special, but speckled trout furnish year around sport. Surf fishing for them is a popular sport at Grand Isle, as well as at the Chandeleur Islands. Firm, flaky flesh makes them well suited for frying or broiling. (Cover photo by Robert Dennie)

LOUISIANA Conservationist

LOUISIANA WILD LIFE AND FISHERIES COMMISSION

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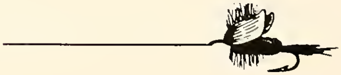

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EDITORIAL

As a result of geological forces, the "lay of the land" in Louisiana is such that the State has the greatest coastal marshes and estuarine areas in the world. The real value of these areas is known only to a relatively few people. Even those who are almost entirely dependent on them for a livelihood are not aware of their importance.

Everyone knows what a marsh is, but what is an estuary? It is a coastal zone with more water than land along its gulfward boundary and more land than water on its inland boundary. It is a zone of tidal action in which the gulf water is diluted by fresh water from land drainage. The boundaries are never fixed and never stable. It is a complex area subject to rapid changes in temperature, salinity, currents, water level, floods and hurricanes. But despite the fluctuating conditions and the harshness of the environment, there is a degree of stability in the ranges of these influences and therefore in the environment.

Through a millineum of time many birds, mammals, fishes, crustaceans and mollusks have become accustomed to conditions existing in the area and some have become dependent on it for survival.

Because of the fertile soil, and the warm climate, plant growth is rapid and total poundage produced is large. And because of natural destructive forces, mortality of plants is high and erosion great. These processes maintain the high fertility of the soil and water and the high productivity of the area. Total protein production from an acre is seven times the production from an acre of good corn land. Currents carry this fertility into the gulf where it is gradually diluted as it moves away from the shore. Therefore, the most fertile areas are in the marsh and estuarine zone and they support the greatest amount of animal life. There is a corresponding decrease in both fertility and productivity as you move into the open gulf.

The marsh and estuarine zone in Louisiana produces more fur animals and winters more waterfowl than any other area in North America. At least 65 percent of the Gulf's commercial fish and shellfish and most marine and sport fish inhabit the estuarine zone during some time in their life. The fertility from this area provides a food supply for all fishes found on the continental shelf.

Examples of fisheries that are important to Louisiana are: 1. Shrimp, the most valuable fishery in the state, 2. Menhaden and fishes processed for cat food, the most productive, 3. Speckled trout, the most important sport fish, and 4. Oysters, the most important commericial species that spends its entire life in this zone.

Approximately 90 percent of the commercial shrimp taken in Louisiana and on the adjacent Continental Shelf are dependent on our estuaries. The young larva are carried inshore from offshore breeding grounds by the currents and wind tides. The estuarine zone serves as a nursery ground where they grow up and later return to the Gulf. The shrimp industry in Louisiana has a net annual value of from 20 to 30 million dollars and supports a total industry worth more than $50,000,000 annually.

Spawning of Menhaden occurs in the Gulf. After hatching and early development, the young larva move into the estuaries where they spend more than half their first year of life before returning to the Gulf. This resource has an average annual value of $10,000,000 in Louisiana.

LESLIE L. GLASGOW
Director

The speckled trout and other edible species make up a valuable fishery in Louisiana. Most such species spawn and live in the estuarine zone but sometimes move to offshore waters. Declines in abundance of such fish are generally associated with unfavorable estuarine conditions. This fishery has an average annual commercial value in excess of $5,000,000 in Louisiana, but the value from a recreational point of view probably far exceeds this amount.

Oysters spend their life in the coastal zone where oyster producers lease and manage their beds. Since oysters attach to immovable objects, they cannot escape changes in their environment. Therefore, if changes are beneficial they flourish but when detrimental they perish.

Man's influence in the estuaries can be beneficial or harmful depending on the alteration he makes. The installation of low level dams that semi-stabilize the water level in marshes, has greatly improved these areas for shrimp and many fishes. The digging of canals that change currents, salinities, and sediments can completely eliminate oysters and so change the environment that mobile species such as fish and shrimp will be forced to leave the area and discontinue its use resulting in depressed populations. Pollution may prevent the marketing of oysters.

The annual value of estuarine and marsh dependent natural resources in Louisiana has never been accurately determined but conservative estimates place it at well over $100,000,000. The value of these renewable resources can be perpetuated forever. With the increasing demand for food, their future value will be much greater than it is today. We must never let the marsh and estuarine area be destroyed. It is our most valuable real estate. Louisiana is fortunate in having approximately 5 million acres in this land and water type.

This editorial is not a sentimental appeal to awaken people to the importance of estuaries and marshes. Its purpose is to show the practical value of these great areas to Louisianaians.

There will be a marsh and estuarine management conference at Louisiana State University on July 19 and 20 at which national authorities will present papers on management for this area. Check the program in this issue of the Conservationist and plan to attend. ✠

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COMMISSION TAKES FIRM STAND ON FUTURE USES OF PUBLIC LAND

On May 27, 1967, the Land Law Review Commission conducted a Public Hearing at the Monteleone Hotel in New Orleans. Purpose of the New Orleans hearing, similar to other hearings conducted throughout the country, was to obtain expressions of opinion from individuals, industry, sportsmen's groups, State agencies and interested groups regarding present and future use of public lands. The following is a statement presented by the Louisiana Wild Life and Fisheries Commission. It was considered one of the most comprehensive statements regarding present land, estuarine and continental shelf uses, and proposed future uses, to be presented to the Land Law Review Commission.

PART I

FOREST RANGE AND MARSHLAND

IN RECENT YEARS the American people have seen the development of strong conflicts of interest in land use practices. In Louisiana, as elsewhere, modern man, with his complex needs, is placing an ever increasing demand on the productivity of land. As he has intensified his management for goods of known monetary value, he has reduced the ability of certain lands to provide him with many of the wholesome pursuits of recreation that he could formerly take for granted. In some instances, land exploitation has resulted in jeopardizing large commercial interests whose economy is dependent upon wise resource utilization. This situation can well be expected to become increasingly acute, especially on private lands as the value of timber, foodstuffs, and fibers increases. With the decreasing recreational opportunity available to the general public on private lands there is every indication to support the belief that many of those who seek outdoor recreation in the future may have to depend upon public lands for this purpose.

The principal public land owner in Louisiana is the U. S. Forest Service of the United States Department of Agriculture. Other federal agencies owning land in Louisiana include the Department of Defense, the Department of the Interior, and the U. S. Corps of Engineers. These agencies collectively own over 1,000,000 acres of land in Louisiana. With the rapid industrial growth and tremendous population expansion, it is a matter of necessity that all federally owned lands with recreation potential be put to the use that benefits the majority of the general public.

Most of the land owned by the U. S. Forest Service in Louisiana occurs in the pinelands of central and northwest Louisiana. This land offers tremendous recreational opportunity for hunters, fishermen, campers, and naturalists. There is little doubt that any management program should be primarily concerned with these types of recreational interests.

Lands owned by the Department of Defense are also comprised mainly of pinelands and are best suited for management similar to the land owned by the U. S. Forest Service. Land owned by the Department of the Interior occurs primarily in the coastal marshes and should receive emphasis on management for hunting, fishing, and trapping, as well as providing sanctuary where needed.

Lands owned by the U. S. Corps of Engineers include large tracts of bottomland hardwoods which are quickly becoming very scarce. This kind of land is also ideally suited for hunting, fishing, and camping, and should be managed so as to provide maximum amounts of this sort of recreation.

The role of federal lands in the overall recreational picture is destined to become highly important to outdoorsmen. Lands that were once available for all types of outdoor recreation have steadily fallen victim to a condition known as progress. Super highways, shopping centers, and soybean fields now occupy places that were once areas heavily utilized by those seeking some type of outdoor recreation. To further complicate our situation is the population explosion and the many advantages that come with modern living. Among these adventages, we must certainly consider the increase in available leisure time for the average worker and the better financial status of a vast majority of people. In addition to

Louisiana's estuarine areas comprise some 5,000,000 acres and border the entire width of the State to an extent of 30 miles inland from the seashore. They serve as a vast, perpetual nursery area for fish and shellfish populations vital to Louisiana economy and recreation.

these factors, we should not forget that people of today are enjoying greater mobility due to the many improvements in transportation. It is paradoxical that as man finally occupies a position whereby he can enjoy the various forms of recreational opportunity, this opportunity is rapidly diminishing.

We should remember that many federal lands are essential to the preservation of certain wildlife populations. The foremost example of this would be the Aransas Wildlife Refuge which has been largely responsible for the preservation of the rare whooping crane. Nearer at hand, here in Louisiana, a portion of the current range of the nearly extinct southern red wolf is on the 142,000 acre Sabine National Waterfowl Refuge in Cameron Parish. This and similar areas are very important in the preservation of suitable protected habitat for the American alligator. At the same time, large areas of federal refuges are accomplishing their primary mission by assisting in the maintenance of continental waterfowl populations. As various industries claim more and more land, federally owned public lands will, of necessity, provide much of the remaining wildlife habitat. It is needless to say that all responsible agencies should anticipate the demands that will be placed upon these lands as time goes on, and at this time work together to formulate comprehensive policies and plans which will assure us that the general public will derive maximum possible benefits from these areas.

In Louisiana, the land shortage has become more acute because of the recent industrial boom and the ever expanding soybean market. In the bottomland hardwood regions, agricultural clearings have made spectacular reduction of important wildlife habitat.

Principal land owner in Louisiana is the U. S. Forest Service of the Department of Agriculture. Other federal agencies own land also. Collectively it adds up to over 1,000,000 acres. It is land that offers hunting opportunity and additional outdoor recreation in the form of fishing, camping, hiking, bird watching and other pursuits.

Recognizing the fact that a shortage of public lands seems unavoidable, the Louisiana Wild Life and Fisheries Commission has initiated a land acquisition program. At this time, four large tracts of prime wildlife habitat, totaling nearly 100,000 acres, have been purchased by the Louisiana Wild Life and Fisheries Commission for the express purpose of providing outdoor recreation. Additional tracts will be purchased as they become available.

There is little doubt that the value of public lands for recreational use will steadily increase in the future. As previously pointed out, private and industrial lands will, of necessity, be managed so as to produce the largest monetary return per unit of land. As this trend slowly brings about changes in current land use, outdoorsmen will be forced to depend on public owned lands for their leisure activities. At this time we should begin a program of annexation of any available lands to existing public property. This act will not only add additional needed acreage to present public property, but will also contribute to the management efficiency of any tract involved.

A firm stand should be taken against the disposal of any federal lands and clear stipulations should be made that these lands will be managed in a manner that benefits the greatest number of people. Should disposal of federal lands become absolutely necessary, then a priority of purchase should be given to the local state conservation agency involved in order that they might acquire the land in question.

Public access to all federally owned land should be permanently assured to the general public. If necessary, additional land should be purchased so as to provide permanent connections between public access routes and public lands. This will assure us of more complete utilization of all public lands.

Future easement policies of the U. S. Corps of Engineers and the Soil Conservation Service should be altered so as to provide for maximum public use. Easements recently used did not provide for public access or utilization of areas developed by federal agencies in some cases where easements are employed.

State ownership of wildlife should be recoginzed in the management of all public lands and wildlife management should receive high priority on these lands. Maximum development for hunting, fishing and other closely related outdoor recreation, such as skiing, hiking, camping, boating, bird watching, etc., should be employed. Certain land use practices, such as intensive timber management and livestock grazing should not be allowed to present serious competition to recreational interests. Livestock grazing in the southeast has no place on lands being managed for maximum utilization by the greatest number of people. Livestock competes directly with many wildlife species and benefits only a small segment of the community.

Wildlife management on public lands should be oriented to the species for which the land is most suitable and from which the public gets the greatest benefit. In those cases where endangered species are found on public lands, special intensive management programs should be initiated and maintained for the perpetuity of the species.

While development is essential in providing for maximum utilization of public lands, it is highly desirable to consider retaining some land for use as wilderness areas. Areas of this type are fast disappearing and we should make every effort to preserve as much land in this condition as practicable.

Federal waterfowl refuges should be opened to controlled hunting and fishing in a manner that would not greatly interfere with the intended purpose of the refuge. Optimum portions of such refuges should be opened where possible in order that sound utilization can be obtained.

Commercialization of all types should be kept to a bare minimum on public lands. This condition should be considered as undesirable in most situations.

Revenues derived from public lands should be utilized so that all surplus funds, above local shares, could be put into use on the area from which they came. This would enable many tracts of public lands to help support their operations.

Mineral development and exploration should be done in a manner that causes minimum damage to habitat and scenic value. All companies involved should be made to adhere to a strict code of operation which would insure minimum alteration of the land involved.

All public lands should have clearly marked boundaries in order that the general public could know what land was open to them. In many instances, fences should be constructed around public lands as protection against intruding livestock.

Only the most modern technical methods should be used in the management of wildlife on public lands. Such areas should be free of influence by local pressure groups. Management plans should be well documented and strictly adhered to in all cases.

Frequently, conflicts arise betwen various federal agencies in the management of certain resources. Greater inter-agency cooperation should be encouraged and all such agencies should be required to follow uniform practices.

PART II

ESTUARINE AND CONTINENTAL SHELF SEGMENT

Introduction

The Louisiana Wild Life and Fisheries Commission welcomes the opportunity to present a statement outlining our thinking on the importance of proper management and protection of the various public lands within or adjacent to the boundaries of Louisiana. Particularly, this segment of our statement deals with the coastal, near coastal, and offshore waters and waterbottoms extending to the limits of the Continental Shelf. In general within an area extending from some three or more miles offshore inward and including vast acreages of embayments and marshlands we find little federally owned public lands excepting three migratory waterfowl refuges involving some 228,000 acres, and one bird sanctuary in the Chandeleur Islands. All of the remainder of this falls within the legal boundaries of the State of Louisiana and is either privately owned or State owned. For the most part, all waters and waterbottoms are state owned and managed while most of the inundated tidal marshes are in private ownership.

The coastal marshes of Louisiana are considered one of the most important wintering areas for birdlife, principally waterfowl. Without preservation of these marshes, the continental populations of waterfowl would drop sharply.

The large offshore area lying beyond a disputed boundary line and extending to the continental shelf is claimed by the Federal government and for the purpose of this discussion is considered public waters and waterbottoms.

Definition, Description and Size of Areas Under Consideration

A. Coastal tidal marshlands, embayments and nearshore waters falling within the boundaries of Louisiana involve approximately 6 million acres of which 228,000 acres of tidal and deltaic marshes are federally owned and managed. For the most part areas are migratory waterfowl refuges, but do serve as nursery areas for shrimp and fish, thereby are of significance to the offshore fishery.

B. Offshore waters and waterbottoms on which mineral lease sales are held and where oil and gas drilling operations occur involve some 16 million acres directly adjacent to the Louisiana boundary and extending offshore in some areas to a distance of 100 miles.

C. For practical purposes all of the area within the 100 fathom line on the continental shelf is considered heavily used public lands since it supports a historic and valuable fishing industry, a rapidly expanding mineral production and an ever increasing area of recreational use and value.

Nature of Area

The coastal area of Louisiana is unique in the United States and possibly the entire world. Across the bottom of the state lies an area of tidal marshlands, shallow embayments and barrier islands encompassing some 5,000,000 acres and bordering the entire width of the state to a depth of 30 miles inland from the seashore.

This area entirely created and influenced by the Mississippi River serves as a vast nursery area for most of the fish and shell fish populations on the continental shelf adjacent to the Louisiana coast and both eastward and westward for much of the northern Gulf of Mexico.

Beyond the coastline and out to the continental shelf, a smooth gradually sloping, sand-clay bottom lends itself to bottom fishing and the efficient use of otter trawls or other type nets. The result is some 20 or more million acres of water and sea floor enriched by the Mississippi River and nurtured by a vast coastal nursery which has a production of fish, shellfish and other natural resources easily harvested and unexcelled anywhere in the world.

Area Resources—Their Amount and Value

The vast resources of the public offshore waters bordering Louisiana fall into two categories: those renewable types such as fish and shellfish, and valuable depletable mineral reserves, principally oil, gas and sulphur.

A. *Renewable Resource Production and Value*—The commercial fishery production of Louisiana waters is truly fabulous. Examples of the more important types and the annual production of each with their dock side values are as follows:

1. SHRIMP—Three species harvested with an annual production of from 60 million to 80 million pounds having a net value of $25,000,000.00.
2. OYSTERS—An annual production of 10 to 15 million pounds valued at from $5,000,000 to $10,000,000 and representing about 20% of the total oyster production in the United States.
3. CRABS—Annual production 7 million to 10 million pounds valued at $1,000,000.
4. MENHADEN—Annual production 650 million to 1 billion pounds converted to fish oil and fish meal valued as approximately $10,000,000.
5. OTHER EDIBLE FISH—Annual production approximately 20 million pounds having a value of some $5,000,000.
6. ROUGHFISH FOR CATFOOD AND MINKFOOD—A newly developed industry expected to harvest 150,000,000 pounds annually in order to supply a newly constructed $2,000,000 catfood plant. The annual value of this fishery for the area approaches $3,000,000.
7. TOTAL ANNUAL PRODUCTION OF ALL COMMERCIAL SPECIES—700 million to 1 billion 100 million pounds having a new dock side value approaching 50 million dollars annually. This does not include the additional value and economy of the associated industries such as packing plants, ice plants, transportation, etc. In all probability the total

(Continued on Page 20)

Menhaden from the purse seine are being removed by suction to the hold of a menhaden fishing boat. Louisiana's annual production is between 650 million and 1 billion pounds. The fish are used in the manufacture of fine oil and fish meal valued at about $10,000,000. The oil is used in manufacture of more than a hundred products.

Toledo Bend Reservoir BASS FINGERLING STOCKING

Dudley Carver

IF YOU HAVE TRAVELED the section of Highway 171 from Leesville to Logansport in the past several years you may have noticed billboard advertisements stating you were in Toledo Bend Country. Since initial planning in 1949, fishermen all over the State of Louisiana have looked with anticipation to having a large reservoir that would supply excellent fishing opportunity. This anticipation is hurriedly becoming a reality. The construction phase is approximately 85 percent complete. Engineering experts associated with the project are expecting full pool stage, dependent on rainfall, by May 1, 1968.

Although created on the Sabine River, which is the stateline boundary of Louisiana and Texas, Toledo Bend Reservoir will be the largest manmade impoundment in Louisiana. Because of the reservoir's tremendous size alone, many Louisiana fishermen will face a new fishing experience.

Personnel of the Fisheries Section of the Louisiana Wild Life and Fisheries Commission recently completed stocking Toledo Bend Reservoir with 1,500,000 largemouth bass fingerlings. Let's look at the reservoir's location, physical features, and research prior to formulation of a stocking plan.

Toledo Bend Reservoir is entirely a joint state effort of Louisiana and Texas with each state appropriating approximately 30 million dollars for construction, land acquisition, etc. Primary purposes of the reservoir are hydro-electric power generation and water supply; however, numerous other benefits will accrue which includes tremendous fishing.

The dam is located on the Sabine River about 18 miles west of Leesville, Louisiana at approximately river mile 156.5. The reservoir derives its name by being located in the "Toledo Bend" of the river. The dam site is in Newton County on the Texas side and in Sabine Parish on the Louisiana side. The spillway is in the left or Louisiana abutement and the power plant is located in the right or Texas abutement. On the Texas side it will lie mainly in Sabine and Shelby Counties with a very small portion in Newton County. On the Louisiana side it will lie in Sabine and DeSoto Parishes.

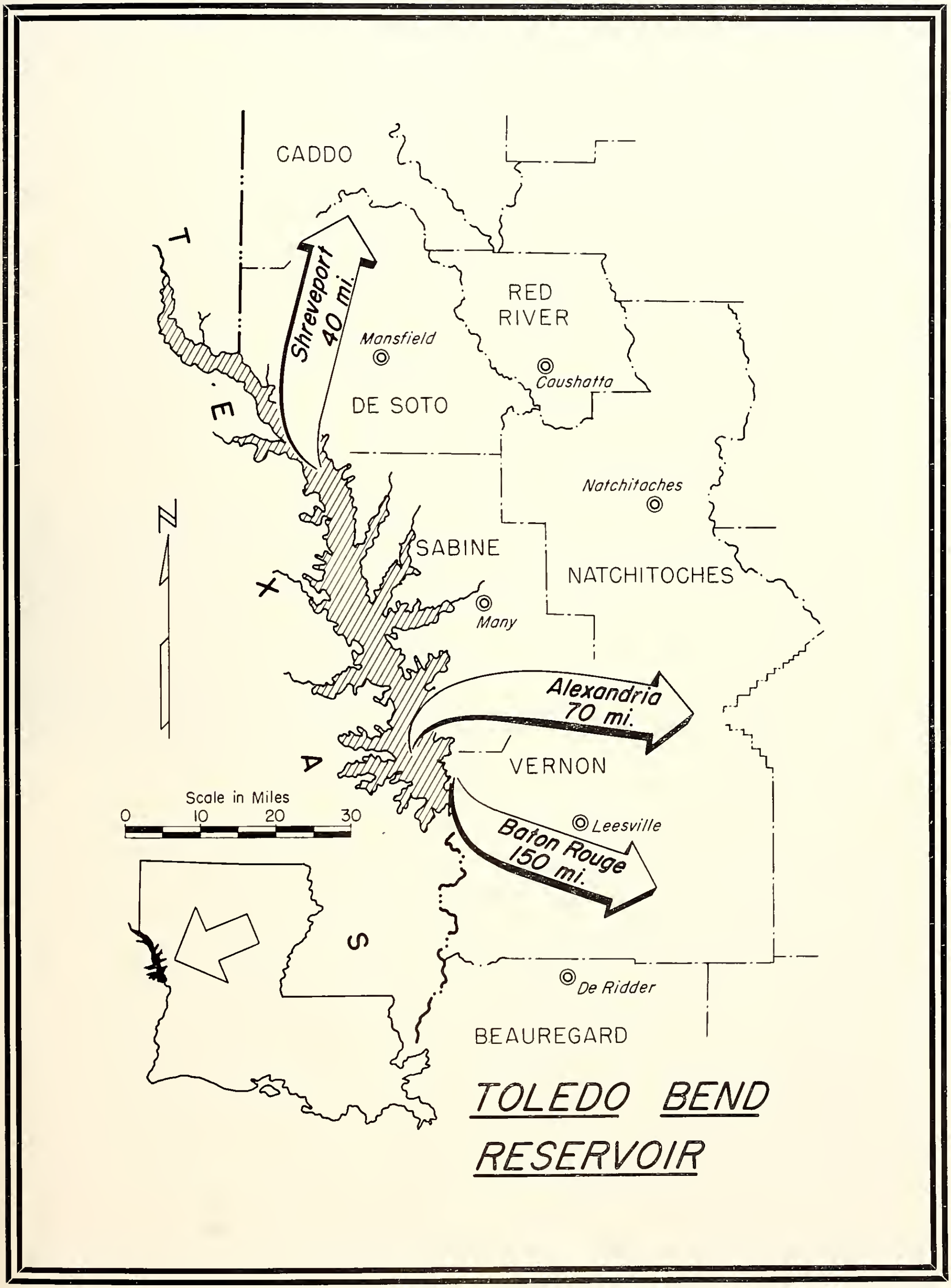
The reservoir at normal pool level will contain a surface area of 197,000 acres with a storage capacity of 4,777,000 acre feet. Of this 197,000 surface acres, 102,000 acres will lie in Louisiana and 95,000 acres in Texas.

Toledo Bend Reservoir will be a long and narrow body of water. At normal pool level, water will extend up-river from the dam for approximately 65 miles to Logansport, Louisiana before receding into natural river banks. The reservoir at full pool stage will inundate 265 miles of the Sabine River and 133 miles of its tributaries. Maximum width will be approximately 15 miles. The reservoir will extend from the main body up four major bayous in Louisiana (Negreet, La-Nana, San Miguel, San Patricio) for distances ranging from five to ten miles with a width up to two miles. Maximum depth will be 99 feet with an average depth of 60 feet. The reservoir will contain approximately 1,200 miles of shoreline. Because Toledo Bend Reservoir is a power reservoir, drawdown will occur during generation of hydro-electric power. Drawdowns will not exceed ten feet and a drawdown in excess of five feet will not occur more than five percent of the time. The reservoir is expected to be full 30 percent of the time.

Fingerlings stocked were 2-4 inches in length. A survival rate of 85 per cent is expected. These fingerlings should reach maturity within a year after being stocked and a length of 10-12 inches.

All the reservoir is not designated for clearing, but a large area of the lower half of the reservoir surface will be clear of trees. Because of its depth a considerable portion of standing timber will be submerged. The feasibility report of Forrest and Cotton, Inc. (1958) estimates that approximately 20,000 acres of timber will be submerged at all times and another 30,000 acres will have various degrees of submergence. It is estimated that approximately 75,000 acres of the surface area will be clear of timber.

The successful management of impoundments for quality fishing in Louisiana in certain cases present a problem because of insufficient, or no, preimpoundment data. With this paramount in



Toledo Bend Reservoir dam is located on the Sabine River approximately 18 miles west of Leesville, Louisiana. On the Texas side the reservoir will lie mainly in Sabine and Shelby counties and in Sabine and DeSoto parishes in Louisiana. (Map by Eddie Bennett.)

mind the Louisiana Wild Life and Fisheries Commission launched an investigation of the fish fauna of Sabine River.

Fishery surveys are inventories of fish populations and the physical, chemical, and biological factors affecting them. The purpose of such an inventory is to obtain fundamental information on the fishery resource of the area studied and conditions of the environment needed to develop intelligent conservation policies and management practices. Although fisheries personnel of the Texas Parks and Wildlife Department had conducted basic surveys of the fish in portions of Sabine River in 1954, 1956, and 1960, we believed it necessary to conduct an additional survey due to several years lapse of time of the Texas studies.

Kenneth Lantz, Fisheries Biologist located at the district office in Opelousas began a study in 1964 of physical, chemical, and biological factors of the river. Lantz's work dealt mostly with water chemistry, plankton, and benthic organisms. Lantz also conducted a limnological survey in 1962 of four tributaries of the Sabine River, which will be inundated by the reservoir. In conjunction with this investigation, species of fish occurring in the tributaries were collected.

Another survey began in early March, 1966 with its primary objective to determine species and occurrence of fish present in that portion of the river to be inundated by the reservoir. The survey terminated in late September, 1966 due to scheduled closure of the river in early October, 1966. At this time the natural ecology of the river would be altered and bias would have occurred in the sampling. Fifteen stations were sampled which extended from approximately ten miles south of the dam site to Logansport, Louisiana. Hoop nets, wire traps, minnow seine, and an electric shocker were used to collect the fish. One oxbow lake adjacent to the river was sampled with the electric shocker.

After careful study of previous and recent research a stocking plan was formulated for Toledo Bend Reservoir. It was recommended that 3,000,000 largemouth bass fingerlings be stocked. This was the only native species recommended for stocking. Shortly thereafter a joint meeting of Louisiana Wild Life and Fisheries Commission and Texas Parks and Wildlife Department personnel was held to discuss interstate efforts for the management of wildlife and fisheries resources of Toledo Bend Reservoir. Our stocking plan was outlined for Texas fisheries personnel and they agreed to supply 1,500,000 of the bass fingerlings.

Louisiana Wild Life and Fisheries Commission has limited hatchery facilities. In order to produce our quota of the fingerlings and sufficient numbers of fish to meet our farm pond and other new impoundment commitments, it was necessary to lease a privately owned hatchery at Delhi, Louisiana.

Our hatcheries had good results and in May, 1967 the Commission completed their portion of the stocking of Toledo Bend Reservoir. The dam was closed October 3, 1966 and stocking began on April 4, 1967. At this time 15,000 surface acres of water were impounded. At present approximately 35,000 surface acres are impounded. Fingerlings stocked were 2-4 inches in length. A survival rate of 85 percent is expected. These fingerlings should reach maturity within a year and a length of 10-12 inches. Seven release sites were used that extended from the dam location to Logansport. This was done in order to assure a wide dispersal. I talked with Mr. Charles Gray, Supervisor Inland Fisheries, Texas Parks and Wildlife Department in March and at that time they had stocked 1,000,000 fingerlings. Recently Texas completed their portion of the stocking.

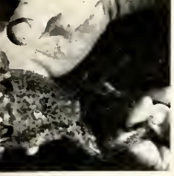
Let's consider briefly why largemouth bass fingerlings were stocked and why only this one native species. The stocking of 3,000,000 largemouth bass fingerlings figures 15 bass per surface acre. It can be argued that this rate is low. However, when one considers (1) that much of the wide open water areas will be less than ideal largemouth bass habitat and (2) potential largemouth brood stock in the river, oxbows, and tributaries, this stocking rate should be adequate.

Royce Norsworthy, Biological Aid releasing a portion of the 1,500,000 bass fingerlings stocked by Louisiana in Toledo Bend Reservoir.

After study of biological data gathered it was found that Sabine River supports a high population of forage and rough fish. The main reason for stocking largemouth bass fingerlings is to have an efficient predator there in high numbers first. This is necessary in order to establish a proven native predator as far ahead of the forage and rough fish as possible.

It is recommended that no other native game fish be stocked in Toledo Bend Reservoir. Bluegill, *Lepomis macrochirus,* and redear sunfish, *Lepomis microlophus,* were found to be common and widely distributed in the survey. These fish are multiple spawners and rapidly expand their numbers in newly created reservoirs. In many cases these fish are stocked indiscriminately and soon become overcrowed. Black crappie, *Pomoxis nigromaculatus,* and channel catfish, *Ictalurus punctatus,* were found in sufficient numbers to indicate these species should populate the reservoir without supplemental stocking.

More fishermen each year will try their luck on this vast new lake. Your "sportsman's paradise" again will be improved, thanks to your fishing license dollar. ✠



BULLFROGS IN LOUISIANA

SAMMY STOKES

BULLFROG LEGS HAVE long been considered a delicacy in homes and restaurants throughout most of the world.

Climate and geographical conditions have made areas throughout the state of Louisiana a natural habitat for bullfrogs. Bullfrogs are harvested each year by sportsmen as well as commercially.

There are two species of frogs in Louisiana of significant sport and commercial value. These are the bullfrog and the pig frog or grunter. The bullfrog is of greater importance both as a sport and commercial species. This is because of its size and statewide distribution. The smaller pig frog is confined generally to southern portions of the State.

The supply of bullfrogs for the commercial market is almost always exceeded by the demand. With this in mind, the Louisiana Wild Life and Fisheries Commission initiated a project to determine the feasibility of rearing bullfrogs under domestic or artificial conditions. There has been very limited, if any, success in the domestic production of bullfrogs. Very intensive and extensive studies should be carried out for as long as necessary to determine if there are any successful means of commercial frog production under artificial conditions. If bullfrogs could be successfully reared domestcially, it would be one of the greatest boons to the commercial fish markets in Louisiana since catfish farming.

The frog rearing project was begun in March 1966 with pens located at Beechwood and Lacombe Fish Hatcheries.

Brood stock were collected during March and April from the wild. The frogs were paired off and placed in a clean pond surrounded by a four foot tin wall. In pairing off the brood stock, the males can be distinguished from the females by the ear disks and thumbs. The ear disks of the males are much larger than the eye, while those of the female are about the same size of the eye. The thumbs of the male are much more thickened and have a stubbier appearance than those of the female. Some other distinguishing features are that the male usually has a much yellower throat and more distinct mottlings of brown.

The frogs spawned very readily beginning about the middle of April, one spawn was recorded as late as June 17.

The bullfrog eggs were allowed to hatch in the spawning ponds without any care. Hatching usually takes five to ten days depending upon the temperature. The tadpoles were stocked in these ponds at different rates to determine if space would have any effect on growth, losses, etc.

There were three open pens and three pens covered with the one inch poultry wire. The three open pens were stocked at the rate of one tadpole per square foot, one per two square feet and one per four square feet respectively. The covered pens were stocked with the same ratios. At the time of harvesting the bullfrogs when they reach market size we should know if predation by birds is a serious factor in bullfrog production, since they were stocked at the same rate in the open pens and predacious birds have no access to the frogs or tadpoles in the covered pens. All the frog ponds were surrounded by four foot tin walls to keep the frogs in their designated ponds and predators such as raccoons and snakes out. The ponds were also kept as free as possible from predatory fish such as largemouth bass, pickerel, warmouth, etc.

The tadpoles were fed varied diets and seemed to take them all readily. Diets included oatmeal and various commercial fish feeds in meal and pelleted forms.

A large percentage of the tadpoles began to transform into frogs in 90 to 120 days after hatching. The remainder overwintered as tadpoles. I do not have any explanation for this. Apparently growth and transformation stops, beginning in the latter part of October as soon as there is a sufficient drop in water temperature. Activity and feed intake is markedly reduced in tadpoles at temperatures below 69 degrees Fahrenheit. Below 60 degrees Fahrenheit it ceases altogether.

Tadpole stage of the Bullfrog. Hind legs have begun to emerge from body.

Shortly after the tadpoles transformed into frogs, problems began. The frogs would not eat the artificial feed. The natural feeding habits of a bullfrog consists of one hundred per cent live animals. Efforts were made, however, to induce frogs to eat artificial feed. Floating type commercial trout feed was placed in the ponds. Other pelleted types that did not float were also added. Fish feed meals were mixed with gelatin and cut into long thin strips so as to have a wormlike action in the water. Some of the feed was dyed to see if this would induce them to feed. All types of artificial feed and methods of feeding them, failed to interest the frogs. Losses of bullfrogs in the ponds were noted shortly after our failures to induce the frogs to take artificial feed. The main reason probably was starvation.

Another problem encountered in rearing young bullfrogs is cannibalism. The young frogs that progress fastest have a tendency to feed upon smaller or less progressive frogs. The frogs that remained alive in the rearing ponds probably existed on natural foods such as insects and the smaller bullfrogs and tadpoles in the pens. Forty bullfrogs from each pen were caught and measured for growth in October 1966.

Frogs stocked at the rate of one per square foot averaged 3.8 inches in length. Frogs stocked at the rate of one per four square feet averaged 5.1 inches in length. The length measured was from the end of the nose to tips of the hind toes. From the results of this 6 month test it is apparent that it will take a good deal of space per frog unless a readily available and economical food supply can be produced.

After our failure to induce the frogs to take artificial feeds, we are now faced with the problem of producing a steady and economical source of live feed. Three sources of feed under consideration at this time are crawfish, fathead minnows and crickets. Crawfish and fathead minnows can possible be grown directly in the pond with the frogs. Crickets will probably be grown outside the ponds and fed periodically to the frogs. This might also apply in part to the crawfish and minnows. We have not given up on artificial feed completely. A small number of frogs will still be experimented upon including force feeding if all else fails.

Methods of feeding the frogs include attracting the crawfish and minnows into shallow areas or putting them in enclosed areas of the ponds. Here the frogs will have ready access to the feed under crowded conditions affording a much better chance to capture them for food.

Frogs stocked at the rate of one per four square feet averaged 5.1 inches in length.

Any animals grown under crowded conditions eventually have outbreaks of diseases and parasites. We must have some knowledge of how to cope with the problem if domestic production is to be successful.

A project is being outlined to diagnose same of the principal diseases and parasites of frogs and methods of treatment. This seems to be a serious problem since medication cannot be placed in artificial feeds for consumption and individual treatment would be a very difficult and costly operation. At present the best method is to keep rearing areas as clean and free from the introduction of parasites and disease organisms as possible.

The information covered up to this point has been very general. If there is any specific question as to exact method and means of any phase of the project, you may write to the following name and address: Sammy Stokes, P. O. Box 278, Tioga, Louisiana. Since the project is only one year old, information and facts obtained have been limited. Beginning this year, our progress with the project will be brought up to date and any additional information gained on the project will be made available to the public. ✠

Experimental holding and rearing ponds at Beechwood Fish hatchery. The Commission is conducting research on the productivity of the bullfrog.

MARSH AND ESTUARY MANAGEMENT SYMPOSIUM

On July 19 and 20 a Marsh and Estuary Management Symposium will be held at Louisiana State University in Baton Rouge. The 2-day meeting will take place in Pleasant Hall. The first session will begin at 9:00 A.M.

The Symposium is a cooperative program sponsored by The LSU School of Forestry and Wildlife Management, The Louisiana Wild Life and Fisheries Commission, The Bureau of Sports Fisheries and Wildlife and The Wildlife Management Institute.

This conference will cover importance, management and research needs for marshes and estuaries of the Southeast. Emphasis will be placed on management.

Speakers were chosen for their knowledge of specific problems. They represent Federal, State, University and private interests. Many are recognized as leading authorities in their field.

Dr. Stanley Cain, Assistant Secretary of the Interior, will speak at a luncheon scheduled to be held in the Student Union at 11:45 A.M. on July 19.

The program is as follows:

Wednesday—July 19

DESCRIPTION

Chairman
DR. T. B. FORD, *Chief*
Division of Oysters, Water Bottoms, and Seafoods
Louisiana Wild Life and Fisheries Commission

9:00 A.M.

Welcome and opening announcements
John A. Hunter, President, L.S.U.

9:15 A.M.

Purpose, background, scope, and organization of symposium
Dr. Leslie L. Glasgow, Director
Louisiana Wild Life and Fisheries Commission

9:45 A.M.

Description of the South Atlantic and Gulf Coast Marshes and Estuaries
Geologic history of marshes and estuaries; types of estuarine environments; hydrologic forces in estuaries; extent and distribution of South Atlantic and Gulf Coast marshes and estuaries.
Dr. T. L. Linton, University of Georgia Marine Institute, Sapelo Island, Georgia

10:15 A.M.

Break

10:30 A.M.

Vegetation, succession and ecology of marshes and estuaries; effects of hurricanes and other natural events.
Francis Uhler and Neil Hotchkiss
Patuxent Research Refuge
Bureau Sport Fisheries and Wildlife

11:00 A.M.

Jurisdiction and ownership of marshes and estuaries of of the South Atlantic and Gulf Coasts.
Edward Latimer, Assistant Attorney General
Columbia, South Carolina

11:30 A.M.

Questions

11:45 A.M.

Luncheon—Speaker
Dr. Stanley Cain, Assistant Secretary of the Interior

VALUES

Chairman
DR. DAVID ADAMS, *Commissioner*
Division of Commercial and Sports Fisheries
North Carolina Department of Conservation and Development

1:30 P.M.

Values of the South Atlantic and Gulf Coast marshes and estuaries to fish and wildlife *Waterfowl*
John J. Lynch, Bureau Sport Fisheries and Wildlife
Lafayette, Louisiana

2:00 P.M.

Other birds
Alexander Sprunt, IV, National Audubon Society

2:30 P.M.

Mammals
Dr. Vagn Flyger, Natural Resources Institute
University of Maryland

3:00 P.M.

Finfish—Commercial
James Sykes, BCF Biological Laboratory
St. Petersburg Beach, Florida

3:25 P.M.

Break

3:35 P.M.

Finfish—Sports
Dr. L. A. Walford, Bureau Sport Fisheries and Wildlife, Sandy Hook Marine Laboratory

4:00 P.M.

Oysters and Clams
Dr. William J. Hargis, Jr.
Virginia Institute of Marine Science

4:25 P.M.

Shrimp
Dr. C. P. Idyll, Institute of Marine Science
University of Miami, Miami, Florida

4:50-5:15 P.M.

Questions

Thursday—July 20

PRACTICES

Chairman
SPENCER H. SMITH, *Regional Supervisor*
Division of River Basin Studies
Bureau Sport Fisheries and Wildlife
Atlanta, Georgia

8:30 A.M.

Practices affecting South Atlantic and Gulf Coast marshes and estuaries

Channelization and spoiling

Charles Chapman, Bureau of Commercial Fisheries
Galveston, Texas

8:55 A.M.

Dredging and filling

A. R. Marshall, Bureau Sport Fisheries and Wildlife
Vero Beach, Florida

9:20 A.M.

Pollution

Industrial and municipal

KENNETH BIGLANE, Federal Water Pollution Control Administration

9:40 A.M.

Agricultural and pesticide

Dr. Philip Butler, Bureau of Commercial Fisheries
Gulf Breeze, Florida

10:00 A.M.

Break

MANAGEMENT

Chairman
DR. O. E. FRYE, JR., *Director*
Florida Game and Fresh Water Fish Commission

10:15 A.M.

Management of South Atlantic and Gulf Coastal marshes and estuaries for fish and wildlife

Marsh impoundments for waterfowl

W. P. Baldwin, Summerville, South Carolina

10:35 A.M.

Marsh burning

Clark Hoffpauir, Louisiana Wild Life and Fisheries Commission

10:55 A.M.

Pest Plan Control by Herbicides

John Steenis, Patuxent Research Refuge, Bureau Sport Fisheries and Wildlife

11:15 A.M.

Management for fur bearers

Kenneth A. Wilson, North Carolina Wildlife Resources Commission

11:35 A.M.

Mosquito Control Impoundments

Dr. Maurice W. Provost, Florida State Board of Health, Vero Beach, Florida

12:00 P.M.

Lunch

1:15 P.M.

Impoundments for oysters, shrimp, and finfish

Dr. G. Robert Lunz, Bears Bluff Laboratories
South Carolina

1:45 P.M.

Gut plugs and weirs; pothole blasting

Wildlife

Robert Chabreck, Louisiana Wild Life and Fisheries Commission

2:05 P.M.

Fish

William Herke, Bureau Sport Fisheries and Wildlife
Louisiana State University

2:30 P.M.

Grazing, mowing, discing, and planting

William W. Neely, Soil Conservation Service
Columbia, South Carolina

3:00 P.M.

Break

Chairman
DAN POOLE, Wildlife Management Institute
Washington, D. C.

3:15 P.M

Common faults of Management

John L. Sincock, Patuxent Research Refuge, Bureau Sport Fisheries and Wildlife

3:45 P.M.

Research needs

Dr. Clarence Cottam, Welder Research Foundation
Sinton, Texas

4:15 P.M.

Summary

Dr. Larry Jahn, Wildlife Management Institute
Horicon, Wisconsin

4:45 P.M.

Close

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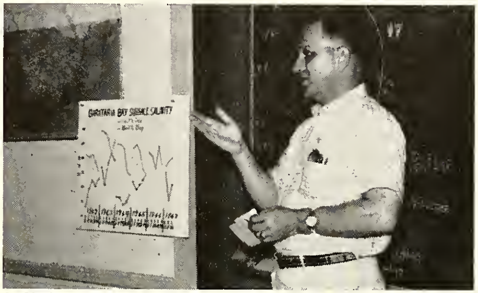
ANNUAL SHRIMP INDUSTRY BRIEFING

More than 100 persons arrive at the Louisiana Wild Life and Fisheries Commission's marine laboratory on Grand Terre Island for the annual meeting of the Louisiana Shrimp Association. Commission boats provided transportation from Grand Isle while others came by private boats, planes and helicopters.

Dr. Leslie L. Glasgow, director of the Louisiana Wild Life and Fisheries Commission, welcomes more than 100 persons who attended the annual meeting at the marine laboratory on Grand Terre Island. The purpose of the meeting was to review and evaluate shrimp data gathered in the several coastal districts and to select the opening date for the spring trawling season.

Dr. Lyle S. St. Amant, Assistant Director of the Louisiana Wild Life and Fisheries Commission, discusses factors effecting shrimp growth and availability, especially the carryover of shrimp from the previous year.



Salinity plays an important part in the growth and density of young shrimp. Dr. T. B. Ford, Chief, Oysters, Water Bottoms and Seafoods Division, illustrates, by chart, the average surface salinity in Barataria Bay for 1967 as compared with past years.

The General Assembly was provided with information concerning the spring shrimp season prospects. Later, a local association meeting was called to consider the season recommendations. Here, the Louisiana Shrimp Association, presided over by President Ira Mott, ponders the recommendation by the Louisiana Wild Life and Fisheries Commission.

After reviewing the compiled information and hearing the recommendations of the Division Chief, Dr. T. B. Ford, the Louisiana Wild Life and Fisheries Commission set the opening date for the Spring trawling season May 15 until July 15, 1967.

(Photos by Albert J. Tullier, Jr.)

TURKEY SEASON - 1967

Joe L. Herring and Leonard New

HISTORY TELLS US that the wild turkey was almost the national bird rather than the bald eagle. Many people contend that the wild turkey, not the eagle, should be our national symbol, and there are many factors to support such a contention. Turkeys are wise, majestic, powerful birds, stately and highly respected; the bald eagle is a noisy eater of carrion, a scavenger and a robber despite its regal bearing and spectacular soaring flight. According to legend, Benjamin Franklin, who was a strong advocate of the turkey as a national emblem, is supposed to have done a little political horse trading and cast the deciding vote in favor of the bald eagle.

Today, the bald eagle is a rare bird and many ornithologists believe our national emblem may become extinct. On the other hand our wild turkey is making a rapid comeback on its once natural range through good game management and enforcement. These two phases of wildlife work must go hand in hand to carry out a good program and that is what personnel of the Louisiana Wild Life and Fisheries Commission are doing.

For the past three years personnel of the Louisiana Wild Life and Fisheries Commission have been conducting a turkey trapping and transplanting program. Birds are being moved from locations of adequate populations to areas that do not have turkeys. The Commission knows that it can do the same with the turkey as it did with deer.

If we should look back 20 years, one may remember that only about 20% of our State was opened for deer hunting. Sportsmen had to travel many miles, sometimes across the state, by invitation to hunt deer. The Commission began a trapping and transplanting program on deer at that time, trapping animals from areas with adequate populations and stocking in areas void of deer.

Now the picture has changed, only about 20% of the State is closed to deer hunting and the remainder open. Eventually, all of the State with suitable deer range will be open with good game management, enforcement and cooperation of the sportsmen.

Without cooperation from the sportsmen and local citizens of an area, a program may fail. With the present turkey trapping and transplanting program all must cooperate to make the program a success. Eventually, we will have turkey hunting on all available turkey habitat in the state instead of three areas now open.

Wild trapped birds are the only kind to use. At various times pen raised wild birds have been experimented with but success was poor. In areas where wild trapped birds have been stocked the results look excellent. In carrying out this program the Commission is stocking its wildlife management areas first. This then will produce a nucleus of birds for stocking other forested areas with suitable habitat.

Turkeys are naturally shy and retiring, and by some have been considered as the most intelligent and wildest of birds of the North American Continent. The suspicious nature of wild turkeys has become intensified by the encroachment of civilization. They are constantly on the alert, ready to take flight, or more often foot, at the first warning of danger. Their eyesight and hearing are extraordinarily keen, and many a vigil in

Jerry Farrar, Biologist, Pascal Jones, Wildlife Management Area Supervisor, Clinton Evans, trapper preparing a "Cannon Net" for trapping wild turkey. The net is thrown over the birds while feeding. A powder charge sets off the canon projectiles to throw the net.

Jack Rushing, Wildlife Management Area Supervisor, and Jerry Farrar banding a wild trapped turkey prior to release on the Russell Sage Wildlife Management Area.

the wood has netted a turkey hunter naught because of an uninhibited sneeze or the inadvertent click of a gun barrel against a limb or other object.

Even though this bird is wild and leery, hunters in Louisiana killed 236 legal birds during the 1967 spring turkey seasons, gobblers only.

A breakdown of this kill revealed that 57 birds were bagged in the north central part of the state. This area includes all or parts of East Carroll, West Carroll, Morehouse, Union, Lincoln, Ouachita, Richland and Jackson parishes open to turkey hunting.

Cliff Williams, Biologist Supervisor, releasing wild trapped turkey on the Russell Sage Wildlife Management Area.

There were 78 gobblers taken in the east central part of the state. This area is made up of all or part of Madison, Caldwell, Franklin, Tensas, LaSalle, Catahoula and Concordia parishes.

The greatest number of birds was killed in the Florida parish area. In all or parts of West Feliciana, East Feliciana, St. Helena, Tangipahoa, Washington, East Baton Rouge, Livingston, St. Tammany and Ascension parishes a total of 91 birds were taken.

Biologist Jack O. Collins preparing to release wild trapped Turkey. The Commission program of trapping and transplanting wild turkey has been very successful.

Prior to and during the turkey season, agents of the Enforcement Division made a total of 18 cases throughout the State. All of the cases have not been disposed of as yet, fines levied in those cases already settled ranged from $25 to $115. This is certainly a low fine to be placed on these birds as the cost for restocking may range from $200 to $300 per bird. Some states have sold wild trapped birds for stocking purposes at $200 per bird. This is one area where cooperation is needed.

When agents arrest someone for killing a turkey out of season, illegally or whatever it may be, cooperation is needed from local people, judges and others. This is the only way that sportsmen can be assured of a season in the future and having birds dispersed over the state so that all legal license holders may have a chance to hunt this majestic bird.

Louisiana has received excellent cooperation from other states in the trapping and transplanting program. Some states have permitted our personnel to trap by permit in their state and bring

Nelson Sumerall, Commission Pilot, loading wild trapped turkey for release. Transporting birds by air is much faster so birds do not have to be held captive but a few hours. Mortality is very low by this method.

the birds to Louisiana for stocking. These states have built up good turkey populations and are interested in helping our State do the same. This is another phase of cooperation.

In past years the Louisiana Wild Life and Fisheries Commmission experimented with pen raised birds but these birds could not survive in the wild. Artificial propagation of wild turkeys has been tried many times in many places, nowhere with notable success. Once raised in captivity, wild turkeys simply refuse to revert to the wild state, preferring to accept the bounty of civilization. Pen raised birds were suspectible to diseases, predators, laws of nature and could not make a go in the wild.

A number of ingenious ideas have been put into practice to increase wild turkeys artificially. Captive wild hens have been staked out or penned in the woods where wild gobblers could come to them. There was little success so this practice was abandoned for one reason or another. It is easy enough to produce a pure strain of wild turkeys in captivity. The problem lies in getting them to "go native" again. ✠

Jack O. Collins, Biologist, releasing a wild trapped turkey. Wild trapped birds have been very successful in the Commission's trapping and transplanting program. The Commission can do the same to bring the turkey back as it has with deer in that good management, enforcement, and assistance from local sportsmen will make the program a success.

NEW ENFORCEMENT CHIEF CONGRATULATED BY DIRECTOR

LEONARD C. NEW, former acting chief of enforcement of the Louisiana Wild Life and Fisheries Commission, was named chief of the enforcement division. The action took place at the regular monthly public meeting of the commission at its main office, 400 Royal Street, New Orleans, May 23.

The promotion was made following Civil Service examinations and from a list of names of the top three applicants for the position furnished by Civil Service.

New joined the wildlife commission in January 1953 and has served with the enforcement division ever since.

A native of Athens, Louisiana, Claiborne parish, New began service with the enforcement division as a captain. On August 1, 1963, he was made a Wildlife Agent III, a Civil Service rating equivalent to the rank of Major. Within two months he was named chief of the division, serving in that capacity for approximately a year.

When the division was reorganized in July, 1964, he assumed the duties of assistant chief. New was named acting chief of the division in mid-April of this year, serving in that capacity until his promotion to full chief of the division May 23.

A resident of Kentwood, Louisiana, since 1935, New is married and the father of two children. He and Mrs. New have one grandchild.

In commenting upon New's appointment as chief by the commission, Leslie L. Glasgow, commission director, said he was gratified that the position had been filled, as he was confident that it would be, from the ranks.

"This is a fine tribute to the enforcement division, he said, "and is good for the morale of our people who realize that promotion within the ranks is not only possible but a reality." ✠

Calendar of Events

Golden Meadow Annual Tarpon Rodeo
Golden Meadow, La., July 7, 8, and 9

* * *

Louisiana State Championship Skeet Shoot
Bogalusa, La., July 14-16

* * *

Louisiana Council of Underwater
Diving Clubs
Spearfishing and Line Fishing
Lake Pontchartrain, New Orleans, La.,
August 5 and 6

* * *

Jefferson Parish Jaycees Fishing Rodeo
Lake Pontchartrain, New Orleans, La.,
Aug. 25, 26 and 27

* * *

Abbeville Kiwanis Club Fishing Rodeo
Abbeville, La., Sept. 2, 3, and 4

* * *

Slidell Optimist Club Fishing Rodeo
Rigolets, La., Sept. 2, 3, and 4

Federation Grants Scholarship

Rodney F. McLean of Creole and Lake Charles, center in the photo above was awarded the $750 scholarship given by the Federation at the recent LSU Honors Convocation. McLean is a graduate student in the School of Forestry and Wildlife Management. Pictured with McLean are Ralph R. Kling, Sr. of Gonzales, left, who is treasurer of the Federation and Charley Bosch, Jr., Baton Rouge, executive director of the Federation who recently was honored as the Wildlife Conservationist of the Year in the Governor's State Conservation Achievement Program. This is the fifth scholarship presented by the Federation and the first to a student at LSU. If you desire to help a worthy student doing graduate work in fish or wildlife management you may contribute to the scholarship fund. Kindly send your check to Wildlife Federation Scholarship Fund, P.O. Box 16089 University Station, Baton Rouge, La.

TIME OUT

By Frank Adams

Sports Editor
Lake Charles American Press

IT IS NEVER AN EASY TASK TO SAY good bye to a friend.

When the friend is a man who stood tall among his fellows the job is even more difficult.

Harry Gates was a man like that. His death last week came as a stunning blow to hundreds of people who had known his ready grin and friendly, "Howdy, neighbor," through long years.

Some people might say Harry was a crusader for conservation, a prodder of the public and official conscience, a teacher, a builder or simply a little guy who loved God's great outdoors.

All of them would be right.

* * *

BASICALLY, HARRY GATES WAS SIMPLY a man who believed in right and wrong and could never sit still for the latter.

The late Harry Gates, Wildlife Instructor for the Louisiana Wild Life and Fisheries Commission until his recent death, is shown with two youngsters explaining how this ancient bear trap worked.

He was a man who loved to hunt and fish, or simply to sit quietly and watch fish jump or squirrels romp or listen to the singing of birds.

More often than not, though, Harry missed the fishing trip or the duck hunt because he was busy trying to make is possible for others to hunt and fish.

Most of his adult life was spent, officially and unofficially, in a constant effort to see that Louisiana did what was right in its management of outdoor resources.

* * *

HE WAS ONE OF THE MAINSTAYS OF the Louisiana Wildlife Federation almost from the time that organization was conceived.

He always was a steady voice of reason in times of stress. Someone once said that Harry was talking when he was born, and it may have been true.

He could converse with governors and statesmen at formal affairs and with equal ease he could lounge on the porch of a country store and chat with farmers or trappers.

Most of the time he talked quietly, but he could cuss and holler when necessary and he had the knack that too many men lack of knowing when to talk and when to holler.

Whichever he did, when things were going wrong, they somehow were a lot better when he finished.

* * *

HE LOVED TO TALK TO ANYONE, BUT his first and foremost love was talking to youngsters in school.

"We haven't done too good a job with what God gave us," he often said. "But these kids can learn how not to make the same mistakes we did and if we give them half a chance they'll make this a pretty good old world."

Harry's job was that of a teacher, but he didn't talk to the kids from that level. His obvious enthusiasm was so contagious that even third and fourth graders delved into biology books long after his lectures.

This knack with youngsters was even more apparent at summer camps, where Harry could actually show nature to the kids while he explained what it meant.

* * *

WHEN HARRY WAS LAID TO REST, there was a brief pause in the services, and clearly across the fields adjacent to the cemetery came the call of a bob-white quail.

Later, a small boy, who had known Harry only briefly, pondered the coincidence of the quail's whistle and with the simple clarity of youth summed up Harry Gates' life.

"The quail knew that his friend has died and was telling him goodbye."

I can't think of a better way to say it. ✠

WILDLIFE-O-GRAM

SEASONS, BAG LIMITS, SHOOTING HOURS

Two commission meetings will be held during the month of july. On Monday, July 17 at 11:00 a. m. the commission will meet to establish the hunting season dates on migratory birds, other than waterfowl.

The regular monthly commission meeting will be held on Tuesday, July 25 at 1:00 a. m. At that time the commission will establish seasons and bag limits and shooting hours on deer, quail, rabbit and squirrel.

ALEXANDRIA COMMISSION MEETING

The commission met with sportsmen, state and parish officials on June 23 and 24 in Alexandria for the purpose of hearing their views on the 1967-68 hunting seasons. The sessions were held at the Ramada Inn in that city.

INTERIOR DEPARTMENT OFFERS BALD EAGLE PAINTING

A color painting of a bald eagle, designated the "Symbol of Our Nation," and suitable for framing and display is being offered by the Department of the Interior, Bureau of Sport Fisheries and Wildlife, as part of a continuing effort to alert Americans to the alarming plight of their national bird, the Wildlife Management Institute reports.

"Symbol of Our Nation" is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 at 50 cents each.

WETLANDS HAVE ROLE IN ROAD PLANS

Wetlands preservation and development will have a prominent role in North Dakota road contruction under an agreement worked out by the highway department, State Fish and Game Department, and the Bureau of Sport Fisheries and Wildlife. Highway construction has destroyed a considerable acreage of wetlands in North Dakota, particularly in the northwestern part of the state, the Wildlife Management Institute reports. The wetlands are used by nesting waterfowl and other wildlife.

These newly established procedures will enable highway engineers and wildlife managers to maintain and enhance basic habitat for wildlife, while simultaneously contributing to the diversity and natural beauty of the roadsides.

EDITOR'S BOOK REVIEW

THE WILD TURKEY AND ITS MANAGEMENT—by Oliver H. Hewitt for the WILDLIFE SOCIETY. A complete documentary of this fine old American bird; a must reading for both the wildlife administrators and sportsmen. Included in its pages, replete with factual illustrations is information of the wild turkey, with the latest figures on its range and population. The hard-bound book can be obtained from: Fred G. Evenden, Executive Secretary, The Wildlife Society, Suite S-176, 3900 Wisconsin, Av. NW, Washington, D. C. 20016. $6.00 the copy.

PUBLIC LAND USE

(*Continued from Page 5*)

value of the commercial fisheries including all phases approaches 100 million dollars a year which is equivalent in rank to any of the major agricultural crops produced in Louisiana.

In addition to a historical fishing industry which pours nearly 100 million dollars annually into the area's economy, there still remain many unexploited species that could add considerably to present production. Large stocks of tuna, shark, and royal red shrimp are known to use the area under consideration and numerous species of smaller edible fish are suitable for home consumption.

8. RECREATIONAL VALUES AND TOURISM—The total recreational value of the various fish species on the Continental shelf and near inshore waters has not been established, but without question it will be of exceedingly great value if it can be properly exploited and made available to the vast army of sport fishermen in the United States. Even in its partially exploited state it has a significant value ranging into several millions of dollars annually.

Sport fishing of all types is excellent along the coast of Louisiana out to the extent of the Continental Shelf. Of recent and great significance is the development of a new big game fishing area near the mouth of the Mississippi River where marlin, tuna, sailfish, tarpon, shark and numerous lesser species are extremely prevalent. Extensive fishing for smaller fish such as dolphin, mackerel, cobia and sea trout, as well as numerous bottom species is prevalent along the coast and furnishes recreation for thousands of citizens.

Certainly, the Louisiana coastal area has yet to come into its own as a recreational and tourist area but all evidence points to the fact that the potential value of this industry could eventually far exceed the present value of the commerical fishery.

From a recreational standpoint, Louisiana's estuarine areas provide the finest waterfowling that can be found in the country. The recreational values, laced with economic values, are tremendous.

Conveyor belt moves Louisiana shrimp into basket. Three species are harvested, with annual production from 60 to 80 million pounds having a net value of $25,000,000.

B. *Depletable Resources*—As we turn to the depletable natural resources such as oil, natural gas, and sulphur, we find that the value of such minerals under the Contiental Shelf is staggering. Certainly, the annual income from these resources is hundreds of millions of dollars, although the cost of production is high because of the location of the resources. Without question, the oil and gas reserves off the coast of Louisiana are of great value to the United States and no doubt must be exploited for the best interest of the population as a whole. On the other hand, however, good management of these depletable resources would insure that exploitation is not too rapid and that the resultant structures abandoned after production is completed would not become a problem in the harvesting of the renewable fishery resource from the area.

Problems in the Area

The basic problems involved in managing the public lands and water bottoms along the coast of Louisiana hinge upon the fact that historically this area supports an exceedingly valuable fishing industry which is now coming in conflict with an expanding mineral and industrial complex. Because of the Mississippi River's enrichment of Gulf waters by its annual flow, and the ease of fishing on these smooth sloping water bottoms, we find that a fishing industry has developed of such a magnitude that it may exceed present economic considerations if one considers the future need for food for an expanding human population. Certainly, if properly managed, the fish and shellfish production within this area of public land should continue indefinitely since it is a renewable resource and it should continue to furnish the area with a significant annual economic boost as well as furnishing needed food for an exploding population. Of significance, however, is the fact that this great fishery is for the most part dependent upon two factors: (1) The preservation of the nursery area so that it may continue to nurture the large populations of offshore fishes and (2) the preservation of offshore fishing area from obstructions and industrial activities which might prevent effective exploitation of the fish population. As we examine the specific types of problems which occur in the area, we find that they fall into several categories as follows:

A. *Competition for Space between Industry and Fishing Fleets*—This involves several types, including an actual loss of fishing acreage resulting from use of space by industry and construction of hazards or obstructions which cause losses in fishing gear or problems in navigation. This might seem insignificant in an area so large as the Gulf but it is even now a serious problem and there is ample evidence that industrial activities associated with mineral exploitation and production will increase considerably before the total resource is exploited. It may seem incredible to the layman or the uninformed, but of concern to many is the fact that the total number of oil well platforms, underwater completions, and attendant pipelines in offshore waters could one day conceivably be so extensive that it would be impossible to satisfactorily operate the fishing fleet. In view of this, there is a great need for careful regulations and restrictions aimed at seeing that construction practices and placement of physical equipment associated with mineral production will not eventually usurp one of the best fishing areas in the world.

B. *Ecological Changes Resulting from Industrial Activity*—Of perhaps even more serious and long-range effect are drastic changes in ecology and hydrography brought about by industrial activities, particularly, in nursery areas which support the offshore fishery. For example, construction practices used in the laying of pipelines, the establishment of local navigational projects associated with oil production when coupled with local drainage, flood control, and land reclamation projects required by industry frequently result in:

1. Direct destruction of fish and shellfish water bottoms.
2. Salt water intrusion.
3. Changes in rates of water exchange.
4. Loss of nursery acreages.
5. Silting.
6. Others.

Such changes in the hydrography of the area frequently result in drastic changes in basic ecology and cause a permanent loss or reduction of fish production in the nursery area. Many such changes are irreversible and of long duration but could have been prevented or at least reduced in extent had the construction projects been properly planned and managed.

C. *Problems in Exploration for Minerals*—In order to explore for oil producing formations, it is necessary that explosives be used to produce seismic recordings. This has resulted in the extensive use of explosives in offshore and inshore waters, so much so, that shot points as frequent as 600 ft. and explosive poundages exceeding 2,000 pounds per linear mile are commonly used in the area being surveyed. It is also true that most of the Continental Shelf has been explored numerous times. The effects of such explosives on fish and fish populations is not at all clear. Certainly, numerous fish are killed by the blast effect and the number killed is in direct proportion to the weight of the explosive used. Of more importance, however, is the fact that little is known of the indirect effects of such activities upon fish populations, migrations, and reproduction.

Also, developing from such seismic activities have come conflicts between fishing fleets and seismic boats over who has priority in the use of the area from a navigational standpoint. Inter-

Louisiana oysters are richly-prized in national markets. Annual production averages 10 to 15 million pounds and is valued at from $5,000,000 to $10,000,000. This production represents about 20 per cent of total oyster production in the United States.

Sport fishing benefits several hundred thousand people in Louisiana. In many cases, the estuarine areas and immediate offshore Gulf of Mexico waters are the most productive for the angler. Aside from recreational values, sport fishing is an important segment of Louisiana's economy.

pretations of navigational rules of the road are in conflict with both groups claiming exceptions to the standard procedures.

Certainly, much could be done here in developing regulations which would protect a valuable fishery and still result in amicable and successful exploration for mineral reserves.

D. *Pollution Problems*—Certainly, as industrial activities have increased throughout the nursery area and offshore waters, problems of pollution from industrial effluent have increased and have placed a greater burden on the enforcement and regulatory personnel in both the State and Federal governments. Local oil pollution, of course, creates many problems—it is unsightly, damaging to sea and bird life, results in a loss of recreational area and potential, and it becomes expensive to control and/or enforce pollution regulations. Yet pollution must be controlled at all cost because unrestricted pollution would result in a fabulous fishery and recreational area being destroyed and a large and valuable area of public lands becoming one big waste sump or cesspool for industrial effluent. Such a condition should never be allowed, but could very well happen if regulations in international waters are not developed and enforced or if the cost of enforcement is never met to the extent that satisfactory control can be developed.

It should be noted that some types of pollution in the area do not result from local industry. As valuable as the Mississippi River is to the area, it is also a source of transport for chemical and industrial waste, detergents, pesticides, bacterial and sewerage contaminations from areas far removed from the Louisiana coast and the Continental Shelf. It is certainly within the realm of possibility that efficient management within the area could well go for naught if activities away from these public lands are allowed to pollute the area without adequate control.

Recommendations and Conclusions

It is hoped that in the above brief statement we have been able to establish the fact that a large area of ocean and ocean bottoms on the Continental Shelf should be considered public land and regulated as such. At the present time many facets concerning the control and ownership of the area are not clear. From a navigational standpoint, international waters start at the three-mile limit; from a fishery regulation point of view, jurisdiction stops at twelve miles (until recently, at three miles) for some species and, possibly, out to the edge of the Continental Shelf for others associated with the bottom. Where minerals are concerned, claims by both Federal and State governments appear to go as far offshore as it is possible to exploit the resource. Unfortunately, the conflicts developing in the area indicate that good regulation and management is needed over the entire area for all usage involved. We believe that if this area is for some reason considered unmanageable or international waters, and, therefore, not within the jurisdiction of the State or Federal Government, then the citizenry of this country will suffer a great loss in the not too distant future.

In final conclusion, we wish to suggest the following recommendations:

1. The value of the area is well established and it should be obvious that it is greatly needed by the United States citizenry now and in the future.
2. A system of management and protection should be devised to protect and preserve the production of natural resources from the area.
3. In our opinion the renewable resources should be given highest priority and protection since they represent a continuing resource forever valuable to the population if managed properly.
4. Depletable resources, though momentarily of greater value, should be exploited carefullly and in such a manner that they will not impair or destroy renewable resources.
5. Strict and effective regulations should be established for industrial operations in offshore areas to avoid a haphazard development of structures, pipelines, and underwater well completions that will forever be an unsightly hazard to navigation and which could remove large areas of productive bottoms from effective fishing. ✠

The softshell turtle of Louisiana inhabits the more open waters of rivers, lakes and bayous. These may be seen sunning themselves on logs and boards and along banks and sliding overboard as you approach. Their delicious meat gives them good maket value.

Experimental Test

DOVE HUNTING REGULATIONS

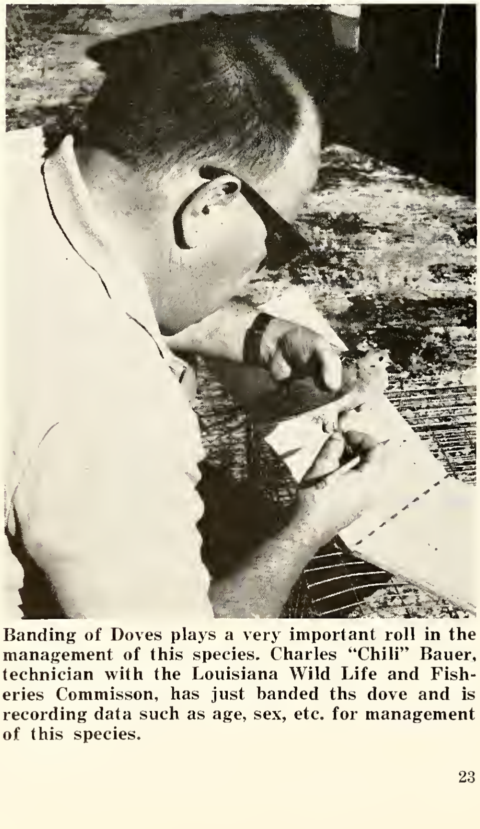
Larry Soileau

THE MOURNING DOVE is the most important migratory game species of the Southeastern States, whether one speaks of number of hunters, total kill or hours of recreation. This bird is also seen and enjoyed in cities and suburbs, North and South, by those who do not hunt, but who take an interest in the dove's well-being. The acknowledged goal in managing this species is to maintain the population in a healthy, productive state which will provide continued good hunting along with all the other kinds of enjoyment that the dove provides.

The manipulation of hunting regulations is the only practical tool presently available in attempting management of the mourning dove. As the biology of the bird is presently understood, the annual rate of increase is high, with the amount of nesting habitat ultimately dependent upon land-use practices. The annual rate of mortality is also high, with hunting making up some unknown fraction of the total. Hunting regulations are imposed with the principal objective of providing maximum recreation while keeping hunting mortality within the ability of the species to reproduce and recover the following year. Yet it is not known what effects such regulations may have upon kill, total mortality or population productivity.

Hunting regulations have been gradually relaxed during the past 15 years from eight birds and 30 half-days of hunting to 12 birds and 70 half-days split into three segments. This three-way split season has served to satisfy the demands of hunters in different sections of our state, each group wishing to hunt when birds are most abundant locally. The annual index of calling breeding doves during the spring, the only measure of the dove population available before this year's research study, has shown virtually no change in the dove population of the Eastern Dove Management Unit during these 15 years of gradually relaxed hunting regulations. The Eastern Dove Management Unit is composed of Louisiana plus all states east of the Mississippi River.

This year the Southeastern States have joined with the Bureau of Sport Fisheries and Wildlife in order to investigate the effects of hunting regulations by measuring the biological changes produced by substantially altering one of the hunting regulations. This study will require four years to complete. During the past 1966-67 and during next fall's 1967-68 dove hunting season, regulations will remain unchanged at 12 birds and 70 half-days of hunting split into 3 segments. This unchanged hunting season will allow two years for measurement of kill and population and provide a base line figure for later comparisons. During the next two years, the 1968-69 and the 1969-



Banding of Doves plays a very important roll in the management of this species. Charles "Chili" Bauer, technician with the Louisiana Wild Life and Fisheries Commisson, has just banded ths dove and is recording data such as age, sex, etc. for management of this species.

70 season, one of the hunting regulations will be changed—possibly the bag limit increased to 18 or 20 doves.

Relaxation of a hunting regulation might not result in an increased total kill of doves; most dove researchers suspect that it will. A kill survey is required to determine this point. If the total kill is increased, one must look for changes in the dove population. The call-count survey, a count of breeders in the spring, will reflect any major changes in the breeding population, while banding will provide information on changes in total mortality and kill rate. A wing collection survey will allow the measurement of the production of young birds and furnish other useful information on daily bag size and distribution of the kill through the season. Each of these four measurements provides a distinctly different kind of information, and further, their combined use gives added knowledge of the dove population.

Since the study was begun only this past hunting season, a sample of Louisiana dove hunters along with those in five other Southeastern States received a large brown envelope in the mail just prior to the beginning of the September season. These hunters were selected from last year's dove kill telephone survey. Inside the envelope were 10 smaller ones and a letter which began: "Dove Hunters: To insure the future of good hunting, we need a wing from each dove you kill." Approximately 15,000 dove wings were mailed to Gainesville, Georgia, by Alabama, Florida, Georgia, Louisiana, Tennessee and Virginia dove hunters. Dove biologists from Louisiana along with those from 18 other states and the Bureau met this January in Gainesville in order to determine the age of the dove wings, which is discernible to the practiced eye of the dove biologist by feather color, and the distribution of daily bag size. The sample of Louisiana hunters sending in wings showed that they killed a bag limit of 12 doves on approximately 10% of their hunting trips. The average bag in this state is three to four birds per trip.

Each state of the Eastern Management Unit was also assigned a quota of 4,000 doves to band yearly during the study in order to measure mortality. Louisiana was able to more than fulfill its quota with 4,763 doves banded in the state.

Probably the most significant measurement of all, however, is a measure of the total dove kill, since the primary objective of the study is to determine whether a change in hunting regulations results in a change in total kill and a subsequent change in the dove population. For the first time in the history of dove management, a reliable estimate of the kill over an entire region of the country has been possible. This is the direct result of the pioneering research by the Wild Life and Fisheries Commission in the field of the dove kill telephone survey. The region-wide survey was directed by Dr. Don Hayne, a noted statistician at North Carolina State University at Raleigh. Dr. Hayne has previously guided telephone surveys here in Louisiana.

The preliminary estimate of the kill of doves in the Easter Dove Management Unit is approximately 23 million. This kill was distributed among the hunting states as listed below:

Eastern Mourning Dove Management Unit

Nonhunting States

Connecticut
Indiana
Maine
Massachusetts
Michigan
New Hampshire
New Jersey
New York
Ohio
Vermont
Wisconsin

It is always good to see Louisiana sportsmen take youngsters on a trip afield. This group has had a successful day afield by killing their limit of doves.

Hunting States	Estimated Kill (1966-67)
Alabama	2,281,000
Delaware	146,000
Florida	3,558,000
Georgia	2,945,000
Illinois	939,000
Kentucky	1,123,000
Louisiana	2,354,000
Maryland	1,033,000
Mississippi	2,312,000
North Carolina	2,088,000
Pennsylvania	254,000
Rhode Island	47,000
South Carolina	1,322,000
Tennessee	1,683,000
Virginia	758,000
West Virginia	41,000
Estimated Total	22,884,000

In all hunting states approximately 1,500 telephone calls were made from Raleigh, North Carolina to randomly selected telephone numbers in order to estimate the dove kill in each state. Since the three-way split season is of such importance to the dove hunters of this state, the Commission had 5,000 telephone calls conducted in order to estimate kill by season segment. The statewide results for the 1966-67 hunting season are as follows:

Season	Hunters	Trips	Kill
Sept. 3-18	72,800	264,000	1,120,000
Oct. 15-Nov. 6	50,400	183,000	842,000
Dec. 16-Jan. 15	27,100	89,000	392,000
Total	85,000*	536,000	2,354,000

*This estimate represents the number of dove hunters in the state who hunted during at least one segment of the season.

As estimated by the telephone survey, the kill in Louisiana has steadily increased during the past three years from 1 million to 1.7 million and now to 2.4 million doves. This presents a bright picture, indeed, but does not alter the fact that dove researchers still do not know how hunting regulations affect total dove kill. This statewide kill increase during the past 3 years has occurred with the same set of hunting regulations.

The four-year study is an ambitious and demanding one. It has been pointed out that the mourning dove is now the most important migratory species in the Southeast; therefore, this cooperative study is even now overdue. If we are not fully utilizing the dove resource and this study demonstrates that hunting regulation manipulations will allow us to achieve our goal of full utilization, this study will be well worth its cost.

This is probably one of the few times in the history of wildlife management when research has been initiated while a wildlife species is still abundant. Research has generally been prompted by a shortage of hunting opportunity. With the present approach, it is hoped that dove managers will learn to wisely use their only present practical tool—the manipulation of hunting regulations. ✠

TEAL HUNTING PERMITS AVAILABLE

Leslie L. Glasgow, director of the Louisiana Wild Life and Fisheries Commission, has announced that federal permits for the teal hunting season, September 22-30 have been received and are ready for distribution.

He urged waterfowlers wishing to hunt teal during the September season to apply as quickly as possible due to the fact that the U.S. Fish and Wildlife Service has established a cut-off date of August 23, 30 days before the opening of the season.

Glasgow said that persons wishing to obtain the free teal hunting permits should address a postcard or letter to the Teal Section, Fish and Game Division, Louisiana Wild Life and Fisheries Commission, Capitol Station, Baton Rouge, Louisiana, 70804. Return addresses should be complete including zip code number.

In addition to the federal permit, duck hunters must possess a valid Louisiana hunting license and a federal duck hunting stamp. The stamp must be affixed to the license and signed by the license holder. These stamps can be obtained from any U. S. Post Office.

"This nine-day special season will be for teal and teal only," Glasgow said. "Hunters are cautioned that violations may result in the loss of this special season and the hunting opportunity which we now enjoy."

"Hunters can be certain that the frequency of violations, deliberate or brought about by improper identification of ducks, will be one of the governing factors in evaluation of this teal season. Every indication that we are doing our best to utilize these ducks and not violate laws will serve in our favor," he said.

Approximately 33,000 permits were issued in Louisiana in 1966 and the state's duck hunters bagged an estimated 96,000 teal. This represented approximately 25 per cent of the kill in both the Mississippi and Central Flyways. ✠

Sympathy Expressed

Members of the Louisiana Wild Life and Fisheries Commission and fellow employees join with the Director in expressing deepest sympathy to the relatives and friends of Wildlife Agents Lloyd C. Andrus, Lake Charles, La.; and Hoyt W. Harrington, Winnfield, La., both of whom passed away recently.

The late Lloyd C. Andrus joined the Commission in March, 1953, first serving as a special investigator, later transferring to the Commercial Seafood Division and, in 1954, transferring back to the Enforcement Division.

The late Harrington W. Hoyt joined the Commission in February, 1953, and served in the Enforcement Division until his recent death.

THE ONES THAT DIDN'T GET AWAY!

Bob Dennie

Photographs By The Author

IN APRIL OF THIS YEAR the current list of record fish was completed by the Louisiana Outdoor Writers, under the supervision of Dan Hardesty, executive sports editor of the Baton Rouge States Times, who is president of the LOWA and chairman of the Fish Records Committee.

At the annual meeting of LOWA there were two new categories added to this list: The Atlantic-Croaker, which is the common croaker caught in Louisiana waters, and the Mako shark. There were also 25 new tackle busters added to the list.

LOWA is continuing its all-out drive to give recognition to those who have caught a fish that will rank in the top ten of the recognized categories. Also this year there is an added inducement to those good enough to make this list. All those who have caught a fish that will rank in the top ten and have filled out the fish record application, along with a clear photograph, will be awarded a handsome 8x10 Record Holder Certificate suitable for framing. All that is necessary is that these fishermen contact Hardesty.

The following is a list of the top three fish in each category, unless there are less than three. Check it and contact your local outdoor writer or Hardesty and see where your "big un" stands.

OFFICIAL LOUISIANA FISH RECORDS

Fresh Water Records

BASS, LARGEMOUTH
11-11, Elwin Husser, Nov. 1958
11-6, Zeke Davis, March 1962
11-0, Robert Berry, March 1959

CATFISH
46-0 E. F. Witteborg, June 1966*

BREAM
2-8, Grant M. Kelly, 1959
2-2, Otis Marshall, May 1966*
2-1, Dee Murphy, April 1957

BASS, SPOTTED (Kentucky)
4-3, Carroll Perkins
2-15, Dr. Lyle S. St. Amant, Aug. 1965
2-8, Lynn Knippers, May 1966*

CRAPPIE (Sac-a-lait)
4-4, Welzie Garrett, April 1950
3-14, Pat Cullen, March 1960
3-13½, Nellie Keller, Feb. 1964

*New Records during 1966.

This 4 pound 12 ounce Atlantic Croaker heads the list of Louisiana record fish. It was caught by Joe Toups of New Orleans. This rod bender was caught on spinning tackle and cut bait.

Salt Water Records

AMBERJACK
83-0, George Tucker, July 1959
75-12, F. C. Buchanan, June 1965
64-4, Mrs. Harold Harleaux, July 1965

ATLANTIC CROAKER**
4-12, Joseph Toups, May 1966
3-8, Salvador Cusanza*
3-7, A. G. Pike, Jr.

BARRACUDA
40-0, J. J. Jones, Sept. 1966*
37-8, John Dofter, April 1965
37-8, Richard Glynn, July 1965

BLUEFISH
9-7, Eugene P. LeCompte, March 1966*
8-13-1½, Patrick W. Burke, Sr., Feb. 1966*
8-7, Patrick W. Burke, Sr., Feb. 1966*

FALSE ALBACORE (Bonito)
24-9, Stirling Couch, July 1949
20-0, Mrs. Lester Plaisance, July 1959

COBIA
149-12, Garnett L. Caudell, May 1965
82-8, Harry Morris, May 1966*
73-0, Jack Dart, May 1954

DOLPHIN
54-0, August Perez, Jr., July 1966*
51-0, Robert Sharp, June 1965
50-0, Harley B. Howcott, May 1962

FLOUNDER
10-0, Richard J. Boll, Jr., July 1965
8-10, Paulton Hebert, Oct. 1958
8-8, Gerald Fatzer, Oct. 1952

JACK CREVALLE
40-0, Edwin F. Stacy, Jr., July 1953
34-0, L. E. Hawsey, July 1951
32-8, H. D. Hecht, May 1953

MARLIN, BLUE
565-0, Al R. Childress, Jr., Aug. 1966*
515-0, Ben F. Vaughan, III, May 1964
497-8, Duke Shackelford, June 1966*

MARLIN, WHITE
95-8, Mrs. Mary Smith, May 1964
92-0, Clyde Hawk, July 1959
92-0, Harley B. Howcott, July 1966*

MACKEREL, KING
55-0, George E. Marcuse, Nov. 1964
51-0, Buddy Pons, July 1960
50-8, Frank Petit, July 1960

MAKO SHARK**
179-8, Gen. Raymond Hufft, May 1966
179-8, Guy C. Billups, Jr., Aug. 1966

MACKEREL, SPANISH
6-8, Al Hoeke, Oct. 1959
6-4½, Roger P. Greene, Sept. 1965
6-1, Carlo Montalbano, Oct. 1965

POMPANO
5-9, Bill Duffy, Jan. 1964
5-9, H. H. McCain, Dec. 1953
5-8, Tony Sebastian, Jan. 1955

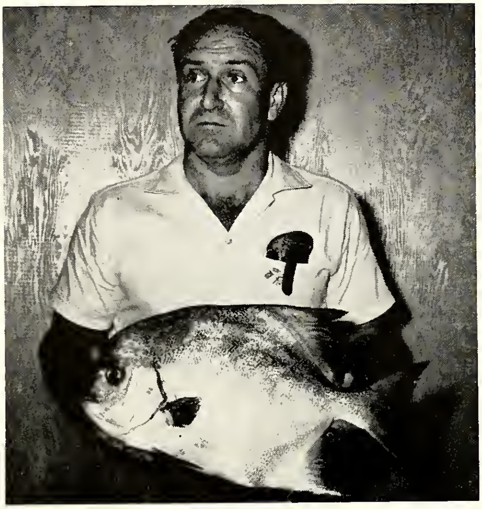
REDFISH
56-8, O. L. Comish, Sept. 1963
45-12, Joseph Vetrano, Oct. 1957
43-0, Sylvia Theriot, July 1959

SHEEPSHEAD
11-8, Mrs. Aubrey Bares, 1955
11-8, Steve Troesch, Dec. 1956

SAILFISH
96-0, John Lauricella, Oct. 1953
85-0, Arnold A. Domin, July 1965
77-8, Tim Sebastian, July 1964

SNAPPER
74-0, Jim Meriwether, Oct. 1963
24-10, Harold Aubry, Sept. 1966*
24-4, George J. Derise, Sept. 1966*

SPADEFISH
8-3, Charles Sebastian, Aug. 1963
6-10¼, Robert J. Hote, Aug. 1966*
6-2, Lawrence Chouest, July 1961



Robert Hote of New Orleans is shown here with his 2nd place Spade fish for Louisiana Waters. The big Spade weighed in at 6 pounds 10-¼ ounces and was caught rig fishing on dead bait.

TARPON
198-8, Oswald Frey, Sept. 1951
183-0, Mark Brown, July 1935
166-0, Schuyler Thibodeaux, Aug. 1965

TRIPLETAIL
39-8, Mrs. Jimmy Toups, July 1959
33-0, Bob Moran, June 1953

TROUT, SPECKLED
12-6, Leon Mattes, May 1950
9-4, Joseph Frey, April 1967*
9-2, Jack Burniston, August 1956

Joe Frey of Chalmette is shown here with the second largest Speckled Trout on record for Louisiana waters. This beautiful spec was caught in the Ship Channel in St. Bernard Parish on spinning tackle with a live Cacaho minnow for bait.

TUNA, BLUEFIN
440-0, Jim Meriwether, May 1963

TUNA, BLACKFIN
18-0, Franklin C. Fisher, Jr., Aug. 1966*
16-4, Mrs. J. R. Gandy, Sept. 1964
15-0, Robert Levert, Jr., Aug. 1963

TUNA, YELLOWFIN
196-8, Guy C. Billups, Jr., May 1966*
181-0, Richard H. Braud, June 1966*
180-0, Clyde V. Hawk, June 1966*

WAHOO
110-0, Mrs. Bud Moore, 1964
76-12, Ed Hamilton, July 1963
70-3, Harley B. Howcott, Jr., July 1963

*New Records during 1966.
**New Category.

Photographs MUST accompany all Record Applications.

All Record Holders listed here and in the top ten will be awarded Trophy Certificates on written request.

RULES

Rules state that a record fish must have been caught on some form of regular fishing tackle, and not on hand lines, set lines, or any form of net or seine. Only one fisherman may handle the tackle, although assistance of another person is permitted to net or gaff the fish when it has been brought to the boat or shore by the fisherman. The scales used to weigh the fish must be an acceptable type such as those in a store which are subject to state inspection, with two witnesses to sign application. Small spring-type scales are not allowed. For salt water records, scales used by any of the major rodeos are acceptable. To get fish identified where required, it is suggested that you take the fish either fresh or frozen to a regional office of the Louisiana Wild Life and Fisheries Commission or enlist the assistance of a Commission game agent who can either make the identification or help find someone who can. Any member of the Louisiana Outdoor Writers Association also will assist you in this matter. 10 places in each category will be recognized.

Mail the completed application, with a photograph of the fish to Dan Hardesty, State Times, Baton Rouge, La., the chairman of the Fish Records Committee of the Louisiana Outdoor Writers Association. ✠

"ATTENTION TEAL HUNTERS"

The nine day teal season beginning on September 22, 1967, will be the last of three experimental September hunts. This is the crucial year. The results of this hunt will probably determine if similar early seasons are to become an annual event in Louisiana.

Remember, you have to convince the U. S. Fish and Wildlife Service that the special hunts are feasible. You can best do this by adhering strictly to the teal season regulations. Hunter behavior will be checked closely in the field and if we carefully conform to the regulations our chances of having similar seasons in the future will be greatly increased.

Keep this in mind because your actions and those of your fellow sportsmen will be the factor determining the future of September teal hunting in Louisiana. We in the Louisiana Wild Life and Fisheries Commission are going to strive for a continuation of the early seasons. You can help justify our position by:

1. Conforming rigidly to the teal season regulations and also by urging your fellow hunters to do likewise.

2. By being extremely careful not to shoot at any ducks other than teal. There will be mottled ducks, wood ducks and also a few pintails, widgeons, shovellers and gadwalls, etc. on hand during the season.

3. By taking no more than four teal daily or having more than eight in possession.

4. By having in possession, while hunting, a federal duck stamp (signed), a State hunting license and your free federal teal hunting permit.

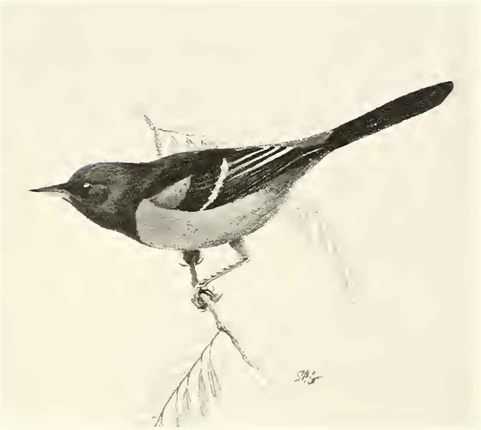
5. By shooting only between the hours of sunrise to sunset September 22-30, 1967, using a shotgun not capable of holding more than three shells.

If these considerations are adhered to our chances of having additional teal seasons in the years ahead will be good. Bear in mind that it took eight years of effort between 1957 and 1965 to convince the U. S. Fish & Wildlife Service that the special seasons are worth trying. Let's not jeopardize our chances for future hunts by failing to comply with any of the teal season regulations this fall. Your cooperation is needed.

The Bird of the month

ORCHARD ORIOLE

Icterus spurius



Charles R. Shaw

TO THE UNINFORMED the *Icteridae*, more popularly known as the Blackbird Family, might sound like a dull lot until it is realized that in addition to blackbirds it includes orioles, meadowlarks, and their relatives who range from very drab indeed to some of the most brilliantly colored birds in our part of the world. Some fourteen species are recorded from Louisiana although not all are of regular occurrence. This is primarily a tropical based family and the majority of species are still found in that area.

The Orchard Oriole happens to be one of our most common and widespread summer residents, ranging from the coastal marshes of south Louisiana right on up to the Arkansas line.

As orioles go, this one is rather conservative in appearance, being primarily black and a rich chestnut brown in the fully mature male, and a greenish yellow in the female and sub-adult male.

This common bird is a little smaller than its colorful cousin the Baltimore Oriole and a reasonably complete description of the males which have reached two years of age or more, is as follows: head, neck, back, tail and most of the wings are black while the breast, belly and rump are chestnut, with a touch of both chestnut and white in the wing area as well. The females and young are a greenish yellow above with a brighter yellow beneath. The first year males also resemble the females except for the fact that they have black throat patches.

Orchard Bird, Brown Oriole, Basket Bird, Orchard Starling are only a few of the many colloquial names which have been applied to this common but somewhat conservative member of the family.

As might be presumed from the name, Orchard Orioles may be found in Orchards but they also occur anywhere there are scattered trees such as streams through fields and pastures, roadsides, canal banks, hedgerows, fence rows, around homes in country and town, etc.

Nests are usually located no more than about twenty feet off the ground and may average only about half that height, many being relatively low, depending on the availability of suitable nesting sites in the chosen area. Decidious trees seem to be preferred over the conifers.

The nest is generally suspended in the forked branch of a tree much as most oriole nests are, but it is not as deep as those of many other species and may not be as far out on the extreme branch tips. Strange as it may seem it is often constructed of grass which is still green and then lined with fine grass or other soft plant material such as milkweed down. While not exactly a colonial nester, these birds do seem to have little aversion to nesting much closer together than is common with most species.

The three to six bluish-white eggs are spotted and scrawled with brown, purplish or black markings.

Orchard Orioles feed primarily in low trees and bushes, rarely on the ground, living on a diet composed largely of various species of insects, although some small fruits, berries and other items may be taken from time to time.

Since fast growing young birds need a high protein diet, countless numbers of insects and larvae are taken during the period when the family is being reared.

For lagniappe the Orchard Oriole has a pleasing song, which he will whistle on the slighest provocation or perhaps on no provocation at all, and which may be heard throughout the whole of his stay with us.

Most certainly these are beneficial birds which richly deserve the protection which is legally theirs during the spring, summer and fall months that they spend with us in Louisiana.

The winter of course is spent enjoying the balmy weather and plentiful food supply of the tropical regions which provide homes for most of the members of this family. ✠

(Illustration by Sidney A. Gauthreaux, Jr.)

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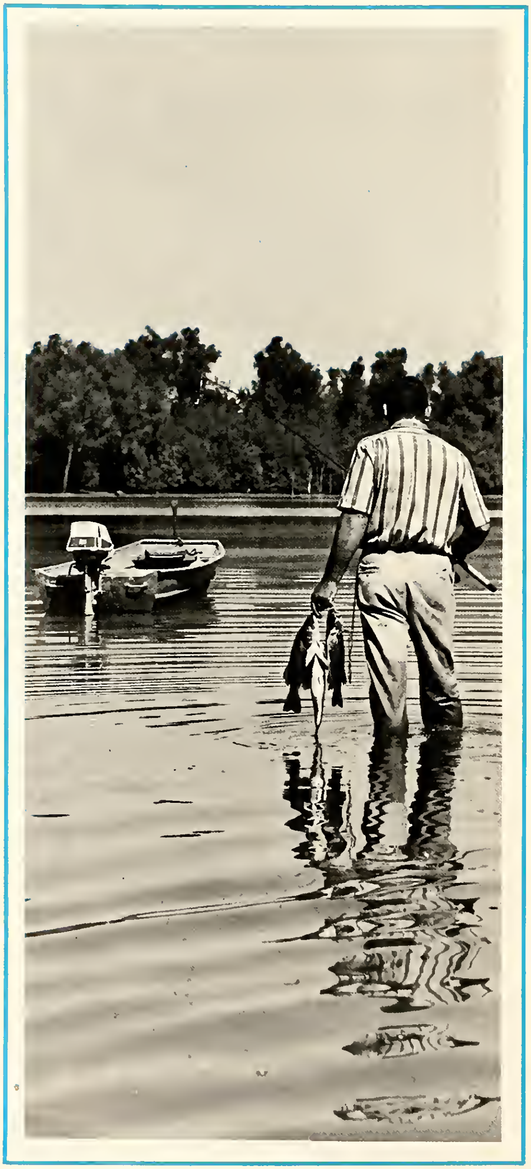

FRESH WATER BASS FISHING IS FOUND IN EVERY SECTION OF LOUISIANA AND OFFERS TOPS IN ANGLING SPORT

A Nice String

When it comes to fresh water fishing, the black bass is probably the most eagerly-sought game fish. Early mornings and later afternoons are best during the warm months but some bass fishermen make a full day of it, fishing in the morning, relaxing in the hot mid-day, and returning to their favorite lake or bayou in the late afternoon. Aside from furnishing top sport on light tackle, bass are also highly-prized on the table.